



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,976	09/05/2003	Ramesh B. Poola	GP-302524	9719

7590 11/16/2004
CARY W. BROOKS,
General Motors Corporation
Legal Staff, Mail Code 482-C23-B21
P.O. Box 300
Detroit, MI 48265-3000

EXAMINER

NGUYEN, TU MINH

ART UNIT PAPER NUMBER

3748

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/656,976	POOLA ET AL.	
	Examiner	Art Unit	
	Tu M. Nguyen	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. An Applicant's Request for Reconsideration filed on September 13, 2004 has been entered. Overall, claims 1-10 are pending in this application.

Based on a previous restriction/election, claims 4-10 are readable thereon and will be examined in their full merit. Claims 1-3 are withdrawn from further consideration by the examiner, as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 4, 5, 7, 8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Beardmore et al. (U.S. Patent 4,852,527).

Re claim 4, as shown in Figures 1-4, Beardmore et al. disclose an intake cam for an engine, the cam comprising:

- a base circle (43); and

- a trapping lobe (36), a dwell portion (38), and a main lobe (39) extending in sequence from the base circle;

wherein the trapping lobe (36) projecting a low height from the base circle of the cam configured to provide an associated intake valve with only a small lift during a portion of an exhaust event in an engine cycle (see Figure 3);

wherein the dwell portion (38) lying adjacent the trapping lobe and projecting slightly beyond the base circle a minimum height to maintain the associated intake valve nearly closed during the dwell portion prior to the end of the exhaust cycle (also see Figure 3); and

wherein the main lobe (39) lying adjacent the dwell portion and projecting a maximum height from the base circle to fully lift the associated intake valve during an intake event of an engine cycle (also see Figure 3).

With regard to the preamble directed to "a diesel engine", a preamble to a claim is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self contained description of the structure not depending for completeness upon the introductory clause. See *Kropa v. Robie, supra at 480*. See also *Ex parte Mott*, 190 USPQ 311, 313 (PTO Bd. of App. 1975). Clearly, the pending claim 4 does not rely on the preamble for completeness.

Re claim 5, in the cam of Beardmore et al., the base circle (43) has an angular extent of from between 120 degrees to 200 degrees (see Figure 2).

Re claim 7, in the cam of Beardmore et al., the main lobe (39) has an angular extent of from 80 degrees to 160 degrees (see Figure 3).

Re claim 8, in the cam of Beardmore et al., the dwell portion (38) between the trapping and main lobes has an angular extent of from 10 degrees to 60 degrees (see Figure 3).

Re claim 10, in the cam of Beardmore et al., the height (0.005 inch in Figure 4a) of the dwell portion (38) above the base circle lies in a range of from 1 percent to 10 percent of the height (approximately 0.25 inch in Figure 3) of the main lobe.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beardmore et al. as applied to claim 4 above, in view of legal precedent.

The cam of Beardmore et al. discloses the invention as cited above, however, fails to disclose that the trapping lobe has an angular extent of from 30 degrees to 100 degrees; and that the height of the trapping lobe above the base circle lies in a range of from 10 percent to 40 percent of the height of the main lobe.

Beardmore et al. disclose the claimed invention except for specifying an optimum range for an angular extent of the trapping lobe and an optimum range for a height of the trapping lobe in relation to a height of the main lobe. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide specific optimum ranges of angular extent and height for the trapping lobe, since it has been held that where the general conditions of

Art Unit: 3748

a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

6. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., trapping lobe opens the intake valve) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the trapping lobe (36) in Beardmore et al. clearly provides an associated intake valve with a small cam lift, as clearly shown in Figure 4a. The phrase "having a small lift" as cited in base claim 4 does not necessarily means that the intake valve must be opened.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

Art Unit: 3748

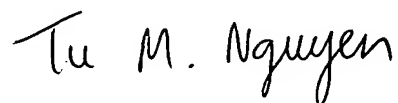
MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (703) 308-2833 or (571) 272-4862 to be effective on November 24, 2004.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (703) 308-2623 or (571) 272-4859 to be effective on November 24, 2004. The fax phone number for this group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1148.



TMN

Tu M. Nguyen

November 14, 2004

Patent Examiner

Art Unit 3748